

UTILITY PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Application No.:	10/799,063	Confirmation No.:	6745
Applicant:	Raj BRIDGELALL	TC/A.U.:	2616
Filed:	March 11, 2004	Examiner:	Ben H. Liu
Docket No.:	022.0033 (1677)	Customer No.:	80,558

Title: SELF-CONFIGURING WIRELESS PERSONAL AREA NETWORK

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AMENDMENT

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with a telephone conference between Examiner Ben Liu and Sherry Schumm on February 10, 2009, please consider the following:

A listing of Claims begins on page 2 of this paper.

Remarks begin on page 10 of this paper.

## CLAIMS

1. (Currently Amended) An apparatus for forming a Wireless Personal Area Network (WPAN) from a plurality of Personal Area Network (PAN) devices, comprising:

a location determinator configured to address a radio frequency identification (RFID) tag function of each of said plurality of PAN devices, and to determine a location for each of said plurality of PAN devices using an RFID location technique;

a comparator coupled to the determinator and configured to compare said location for each of said plurality of PAN devices with a WPAN association criteria in order to determine an identification of each of said plurality of PAN devices that at least partially satisfy said WPAN criteria, wherein said WPAN association criteria include one or more criteria selected from a group of criteria consisting of a PAN device of said plurality of PAN devices being located within a first spatial boundary of a predetermined size, the PAN device being located within a second spatial boundary of a predetermined shape, the PAN device being located within a third spatial boundary for a first predetermined time, the PAN device moving together with at least one other PAN device of the plurality of PAN devices substantially as a group for a second predetermined time, and the PAN device being located within a predetermined distance of a wireless element; and

a communication link coupled to the comparator configured to transmit, to said plurality of PAN devices that at least partially satisfy said WPAN criteria, said identification of each of said plurality of PAN devices that at least partially satisfy said WPAN criteria in order to form a WPAN in which said plurality of PAN devices that at least partially satisfy said WPAN criteria mutually and directly intercommunicate with each other over wireless links.

2. (Original) The apparatus of claim 1 wherein the determinator determines the location of each of said plurality of PAN device as a function of time and the comparator selects those of said plurality of PAN devices that move substantially together and the communication link transmits the identification of the selected devices.
3. (Original) The apparatus of claim 1 wherein the communication link comprises a main hub transceiver coupled to the determinator and a remote relay transceiver coupled to said plurality of PAN devices.
4. (Previously Presented) The apparatus of claim 3 wherein the plurality of PAN devices intercommunicate using a first combination of data rate and signal power and the main hub and remote relay communicate using a second combination of data rate and signal power, different than the first combination.
5. (Previously Presented) The apparatus of claim 4 wherein the first combination, relative to the second combination uses shorter range lower power signals, and the second combination, relative to the first combination, uses longer range higher power signals.
6. (Previously Presented) The apparatus of claim 1 wherein the communication link comprises a wireline link to a remote relay and a wireless link from the remote relay to the plurality of PAN devices.

7. (Currently Amended) A Wireless Personal Area Network (WPAN), comprising:
- a plurality of Personal Area Network (PAN) devices each having a Radio Frequency Identification (RFID) tag function;
  - a remote communication node wirelessly coupled to at least two of said plurality of PAN devices; and
  - a base station coupled to said remote communication node and said RFID tag function of said plurality of PAN devices, wherein said base station is configured to:
    - address the RFID tag function of each of said plurality of PAN devices;
    - determine a location for each of said plurality of PAN devices with at least partial utilization of said RFID tag function;
    - compare said location for each of said plurality of PAN devices with a WPAN association criteria in order to determine an identification of each of said plurality of PAN devices that at least partially satisfies said WPAN association criteria, wherein said WPAN association criteria include one or more criteria selected from a group of criteria consisting of a PAN device of said plurality of PAN devices being located within a first spatial boundary of a predetermined size, the PAN device being located within a second spatial boundary of a predetermined shape, the PAN device being located within a third spatial boundary for a first predetermined time, the PAN device moving together with at least one other PAN device of the plurality of PAN devices substantially as a group for a second predetermined time, and the PAN device being located within a predetermined distance of a wireless element; and
    - transmit said identification of each of said plurality of PAN devices that at least partially satisfy said WPAN association criteria to said remote communication node for distribution to at least two of said plurality of PAN devices so that said plurality of PAN devices that at least partially satisfy said WPAN association criteria can mutually and directly intercommunicate with each other within the WPAN over wireless links.

8. (Previously Presented) The network of claim 7 wherein the base station comprises at least one transceiver and at least three receivers for determining the location of said plurality of PAN devices.
9. (Previously Presented) The network of claim 7 wherein the WPAN association criteria employed by the base station include identifying a subset of the plurality of PAN devices that move as a group.
10. (Previously Presented) The network of claim 7 wherein the plurality of PAN devices intercommunicate using a Bluetooth or Zigbee compliant communicator function.
11. (Original) The network of claim 7 wherein the base station and the remote communication node intercommunicate using an 802.11 or Bluetooth or wireline communication arrangement.

12. (Currently Amended) A method for forming a Wireless Personal Area Network (WPAN) with a plurality of Personal Area Network (PAN) devices, comprising the steps of:

addressing a radio frequency identification (RFID) tag function of each of said plurality of PAN devices;

determining a location for each of said plurality of PAN devices using an RFID tag location technique;

comparing said location for each of said plurality of PAN devices with a WPAN association criteria, wherein said WPAN association criteria include one or more criteria selected from a group of criteria consisting of a PAN device of said plurality of PAN devices being located within a first spatial boundary of a predetermined size, the PAN device being located within a second spatial boundary of a predetermined shape, the PAN device being located within a third spatial boundary for a first predetermined time, the PAN device moving together with at least one other PAN device of the plurality of PAN devices substantially as a group for a second predetermined time, and the PAN device being located within a predetermined distance of a wireless element;

determining an identification of a subset of said plurality of PAN devices based at least in part upon said comparing step; and

transmitting said identification of said subset of said plurality of PAN devices that at least partially satisfy said WPAN criteria to at least said subset of PAN devices so that said subset of said plurality of PAN devices can mutually and directly intercommunicate with each other within the WPAN over wireless links.

13. (Original) The method of claim 12 prior to the transmitting step, forming an ad-hoc network of said plurality of PAN devices, intercommunicating with each other and with the base station.

14. (Original) The method of claim 13, wherein the forming step employs the Bluetooth or Zigbee standard.

15. (Original) The method of claim 12 wherein the determining step comprises broadcasting a signal from a base station and detecting return signals from an RFID tag function associated with each of the plurality of PAN devices.

16. (Original) The method of claim 15 wherein the determining step comprises detecting the return signals using multiple receivers.

17. (Currently Amended) A method for forming a Wireless Personal Area Network (WPAN) from a plurality of Personal Area Network (PAN) devices, comprising:

addressing a radio frequency identification (RFID) tag function of each of said plurality of PAN devices;

determining a location for each of said plurality of PAN devices using an RFID tag location technique;

comparing the location determined for each of the PAN devices with a WPAN association criteria, wherein said WPAN association criteria include one or more criteria selected from a group of criteria consisting of a PAN device of said plurality of PAN devices being located within a first spatial boundary of a predetermined size, the PAN device being located within a second spatial boundary of a predetermined shape, the PAN device being located within a third spatial boundary for a first predetermined time, the PAN device moving together with at least one other PAN device of the plurality of PAN devices substantially as a group for a second predetermined time, and the PAN device being located within a predetermined distance of a wireless element;

choosing a subset of the PAN devices whose locations at least partially satisfy the WPAN criteria; and

transmitting identification of the devices in the subset to at least the subset of PAN devices so that said subset of PAN devices can mutually and directly intercommunicate with each other within the WPAN over wireless links.

18. (Original) The method of claim 17 wherein the choosing step comprises choosing those PAN devices that are within a predetermined distance of each other.

19. (Original) The method of claim 17 wherein the choosing step comprises choosing those PAN devices that move substantially as a group.



20. (Original) The method of claim 17 wherein the choosing step comprises choosing those PAN devices that are within a predetermined distance of each other and move substantially as a group.
21. (Original) The method of claim 17 wherein the transmitting step comprises first transmitting to a remote relay and second transmitting from the remote relay to the subset of PAN devices.
22. (Original) The method of claim 21 wherein the first transmitting step comprises transmitting over a wireline link to the remote relay.
23. (Original) The method of claim 22 wherein the second transmitting step comprises transmitting over a wireless link

REMARKS

Reconsideration of this application is requested in light of the foregoing amendments and the following remarks. By virtue of this response, claims 1, 7, 12, and 17 have been amended. Claims 1-23 currently are pending in this application.

In a telephone conversation between Examiner Ben Liu and Sherry Schumm, amendments to the independent claims were discussed that may place the claims in a condition for allowance. More particularly, Examiner Liu and Ms. Schumm discussed amending the claims to add a Markush group that recites various WPAN association criteria.

In accordance with the telephone conversation, Applicant has amended independent claims 1, 7, 12, and 17 in a manner that Applicant believes to place claims 1-23 in a condition for allowance. Applicant respectfully requests that the amendments be considered, and that claims 1-23 be allowed.

CONCLUSION

In view of Applicant's amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the Applicant's attorney at (480)385-5060.

If for some reason the Applicant have not paid a sufficient fee for this response, please consider this as an authorization to charge Deposit Account No. 50-2019 for any fee which may be due.

Respectfully submitted,  
Ingrassia Fisher & Lorenz, P.C.

Date February 10, 2009

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